- 7. Satellite service is prohibitively expensive. I recently took bids on connecting a nearby location to our office via satellite at T1 speed. While this would have cost \$500 for T1 service through MCI/Worldcom, the comparable Satellite cost was from \$10,000 to \$25,000 per month. No customer is willing to bear such a high costs particularly because the performance is not good due to high lag times. Satellite is not a workable solution for high speed access at this time.
- 8. Earlier this year, on behalf of Brand X, I wrote and formally requested that ATT and TIME WARNER interconnect and provide cable modem service in the form of line services and/or unbundled network elements. A copy of my proposal is attached.
- 9. ATT refused access to its network, saying that it was not required to do so. ATT refused to negotiate or interconnect or sell us unbundled network elements, lines, or any other kind of service. A copy of the ATT letter is attached.
- 10. Time Warner responded in a more friendly way, saying that they eventually planned to open their network to access from competitive providers.
- 11. Time Warner has provided to me written contract proposals which I feel are grossly unfair to Internet Providers, for two reasons: first, because they are financially disadvantageous, and second, because it is conceded by Time Warner staff that the arrangements will not be the same for all ISP's. I fear that if we do business with Time Warner we will be faced with the same kind of predatory pricing practices we currently suffer from in Pac Bell areas, in that the in-house ISP will pay far lower prices for line services that we would, making it impossible for us to compete.
- 12 I believe that uniform pricing is essential to establishing a level playing field which will benefit consumers by encouraging competition. Without fair and uniform pricing, any pretense at an open network is false.
- 13. In numerous conversations Ihave had with them Time Warner staff have repeatedly said that they favor open access, but while we have repeatedly stated our willingness to provide access to any customer anywhere in the country on any network, we have been unable to make any headway in actually providing any services.
- 14. Most recently, yesterday (11/29/00) I had a conversation with Time Warner attorney Bonnie Blecha, in which I reiterated our commitment to cable modern service and our desire to participate in the supposed trials in Columbus Ohio, or in any other location. Bonnie Blecha stated that this would not be possible.
- 15. At various times Time Warner staff have indicated that extended trials would be necessary over a period of years in order to validate the concept of open access. For this reason and for reasons relating to various contracts that Time Warner had signed with Roadrunner, a partially owned semi-subsidiary, it would not allow any open access in Southern California

Pickrell Affidavit 2/3

- until 2002. Bonnie Blecha confirmed this statement in our conversation yesterday (11/29/00).
- 16. As a technical person and an expert and professional in the field of providing high speed access services, I do not find it credible that any kind of trials should be required at all, unless these are simply a training period for inexperienced Time Warner staff who are entering a new field which is unfamiliar to them.
- 17. The technology for allowing multiple ISP's to share the same network has been demonstrated in the area of Internet already, where many companies share the same backbone lines and facilities. We have many different customers sharing our network, and we frequently share facilities with other ISP's. One example of this is 30 or more ISP's providing DSL service over the Verizon network in Los Angeles. Another example is cooperatively owned modem equipment in our Marina del Rey facility, which is shared by several ISP's. Billing and traffic issues have to be addressed, but it is not a big problem. These are the kinds of problems we solve every day in our business.
- 18. If providers such as ATT and Time Warner are not up to the challenge or are not able to solve technical problems, it is my opinion that they should step aside and let more competitive companies with better technical expertise step in and take the lead in establishing open access policies.
- 19. Attached to this affidavit are copies of my correspondence and some answers that I have received.

Julios I tomoti

Jim Pickrell

Brand X Internet LLC

927 6th Street

Santa Monica CA 90403

(310) 395-5500

jimp@brandx.net

www.brandx.net

Proposal for Interconnection between Brand X Internet LLC and Time Warner Page 1 of 3

Brian Pickrell

8/4/00

Jim Pickrell President Brand X Internet LLC 927 6th Street Santa Monica, CA 90403 (310) 395-5500 email info@brandx.net

Ms. Tina Davis VP and Assistant General Counsel Time Warner Telecom of California L.P. 5700 South Ouebec Street Greenwood Village CO 80111

Peter Casciato Attorney for Time Warner Telecom of CA, L.P. 8 California Street, Suite 701 San Francisco, CA 94111

Proposal for Interconnection Agreement between Brand X Internet LLC and Time Warner

Purpose: The purpose of this letter is to outline general terms for an interconnection agreement which would allow customers of Time Warner's Cable Systems to select Brand X Internet LLC ("Brand X") as their Internet Service Provider ("ISP"). Time Warner would treat Brand X on the same financial and technical basis as its own in-house ISP and affiliate(s), and would be paid for line services under the same terms and conditions Time Warner's current ISP affiliate.

This agreement would allow Time Warner to increase profits by reducing expenses relating to its in-house ISP, as well as bring in new customers and new profits through its interconnection with Brand X. Time Warner will increase its profits because line charges will make all ISP customers equally attractive no matter which ISP provides the Internet services.

General Proposal

Brand X will be offered as an alternative to Time Warner's ISP affiliate. Time Warner will be paid for access to lines and other services, but will allow Brand X to connect to the Time Warner network and provide Internet Access to Time Warner customers on a non-discriminatory basis. Brand X will connect to the Time Warner network by co-locating routers and other equipment at Time Warner head end offices, and routing traffic from these locations back to the Brand X network center in Marina del Rey.

Sales Proposal

- 1. All customers who call Time Warner and ask about cable internet will be informed that they have a choice of ISPs. A script for this explanation will be negotiated on a non-discriminatory basis. This script will be read to all customers or potential customers who inquire about ISP services.
- 2. Time Warner will create a web page listing alternative Internet Providers. All customers who ask about Internet Services will be given the address and referred to this page.
- 3. A commission for Brand X signups from Time Warner will be negotiated. This commission will be offered on a non-discriminatory basis and will be the same as the commission paid by Time Warner affiliates to Time Warner.
- 4. A commission for customers Brand X signups brought to Time Warner will be negotiated. This commission will be offered on a non-discriminatory basis and will be the same as the commission paid to Time Warners affiliates by Time Warner.

Proposal for Interconnection between Brand X Internet LLC and Time Warner Page 2 of 3

5. Time Warner will provide Brand X Internet sales department access to customers lists for sales purposes on a non discriminatory basis as it provides this information to its in house or affiliated ISP's. This information will include, at a minimum, a monthly list of all customers, and a monthly list of new customers, in comma delimited or equivalent format, including name, address, and phone number of this customer. This information will be used by Brand X only for the purpose of advertising Internet Services and will not be sold or publicly released.

Technical proposal

- 1. Time Warner customers who select Brand X as their ISP would be provided Internet Access through Brand X over the Time Warner lines. This traffic would travel from the customer location, over Time Warner lines, to the Brand X co-located equipment at the Time Warner head end office, from there to the Brand X office in Marina del Rey, and from there out to the Internet.
- 2. Time Warner customers who select Brand X as their ISP would receive email and web services from Brand X.
- 3. Brand X would be allowed to co-locate one 19 rack of equipment at each Time Warner head end office, and to connect this equipment to the Time Warner network.
- 4. Brand X would be allowed to bring in T1 or T3 lines to connect this equipment to its offices in Marina del Rey.
- 5. Time Warner would agree to route Brand X IP addresses on its network.
- 6. Time Warner customers who select Brand X as their ISP would not have their traffic routed through Time Warner's ISP affiliate, would not have their traffic filtered or run through proxy, and would not be required to view advertising or web pages from Time Warner or its affiliates.
- 7. Time Warner would retain responsibility for lines and would offer installation, support and repair of these lines on a non-discriminatory basis.

Financial Proposal

- 1. Time Warner customers who select Brand X as their ISP will pay Time Warner a line fee which would be the same regardless of whether they choose Time Warner's ISP affiliate or Brand X as the ISP. This line charge would be added to their cable TV billing.
- 2. This fee is currently \$10 per month for those who subscribe to cable TV, and free for those who do not subscribe. This fee would be subject to renegotiation, as the current arrangement appears to offer a subsidy, but any fee would be nondiscriminatory and would not depend on the choice of ISP.
- 3. Time Warner would agree that installation, equipment fees, and other charges, including promotional offers, would be the same regardless of choice of ISP.
- 3. Time Warner would agree not to subsidize or bundle services. Line charges and television charges would not be used to underwrite or subsidize Internet services, or advertising, sales, or provision of those services. If any such subsidies were offered, they must also be provided to Brand X on equivalent terms.
- 4. Brand X customers would pay Brand X directly for ISP services at prices to be determined by Brand X Internet.

Proposal for Interconnection between Brand X Internet LLC and Time Warner Page 3 of 3

5. Brand X would pay Time Warner for co-location or other services on terms to be negotiated but not to exceed prices charged for co-location in the Internet Industry by companies such as PSI, Level Three and Exodus. It is understood that the charge for this service is generally not more than \$800-\$1500 per rack.

Terms and Cooperation

- 1. It is acknowledged that Brand X and Time Warner must cooperate and share information to maximize benefit for both sides. Customer, technical and accounting information will be shared by Time Warner on a non-discriminatory basis and access to this information will not be used by Time Warner to provide advantage to its inside or affiliated ISP. The parties shall treat this information as confidential.
- 2. Brand X and Time Warner agree to share accounting information without limitation in order to verify that the terms of this agreement have been followed. No reasonable request for accounting information will be denied. The parties shall treat this information as confidential.
- 3. Brand X and Time Warner agree to share network information without limitation in order to facilitate interconnection. Information to be shared includes network maps, office locations, router configurations, equipment types, standards and documentation. The parties shall treat this information as confidential.

Completion of this agreement

The purpose of this agreement is to outline terms for a formal contract.

Upon agreement, lawyers will commence negotiation of legal details, and a final agreement will be signed within 30 days. Any dispute or failure to agree on terms under this agreement will be resolved by binding arbitration with the arbitrator to be chosen within two weeks and the final decision to be rendered no later than 45 calendar days from the date of request for arbitration.

I hope that you will agree to this proposal, and await your response.

Sincerely,

Jim Pickrell
President
Brand X Internet LLC

Proposal for Interconnection between Brand X Internet LLC and Media One/ATT Page 1 of 3

7/28/00

Jim Pickrell President Brand X Internet LLC 927 6th Street Santa Monica, CA 90403 (310) 395-5500 email info@brandx.net

Ruth MacNaughton, General attorney

ATT

795 Folsom St San Francisco, CA 94107

Tel.: 415-442-3094 macnaugh@att.com Teresa Ono ATT

795 Folsom St San Francisco. CA 94107

(415) 442-2902.

Glenn Stover

AT&T 795 Folsom Street

San Francisco, CA 94107

Perry Parks

Government and Public Affairs

Media One

550 N. Continental Blvd. Suite 250

El Segundo, CA 90245

310-647-3056

pparks@mediaone.com

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Proposal for Interconnection between Brand X Internet LLC and Media One/ATT Page 2 of 3

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Proposal for Interconnection between Brand X Internet LLC and Media One/ATT Page 3 of 3

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Jim Pickrell President Brand X Internet LLC

Proposal for Interconnection between Brand X Internet LLC and Media One/ATT Page 1 of 3

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Jim Pickrell President Brand X Internet LLC 927 6th Street Santa Monica, CA 90403 (310) 395-5500 email info@brandx.net

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Proposal for Interconnection between Brand X Internet LLC and Media One/ATT Page 3 of 3

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Sincerely,

Jim Pickrell
President
Brand X Internet LLC

8/4/00

Jim Pickrell
President
Brand X Internet LLC
927 6th Street
Santa Monica, CA 90403
email jimp@brandx.net

Jerome Candelaria California Cable TV Assoc. 4341 Piedmont Ave. Oakland, CA 94611 (510) 428-2225 (510) 652-3749

Re: Interconnection with ATT and Time Warner

Greetings.

Brand X Internet LLC, a CLEC and ISP located in Santa Monica, CA, desires to interconnect and also buy unbundled network elements from carriers AT&T and Time Warner Telecom. I see from papers such as the REPLY COMMENTS ON TWO DRAFT DECISIONS OF AL J PULSIFER CONCERNING 619 NPA RELIEF DATED APRIL 4 2000" that you represent both Time Warner and AT&T, so I am providing you a courtesy copy of our request to commence negotiations with each of these parties.

It is my goal to make sure that the proper parties are properly made aware of our request.

if you are aware of anyone else who should receive copies of these letters, please forward them and also please let me know so that I can send further correspondence to them directly. I am also attempting to find the proper contacts for interconnection and CPUC matters at Adelphia and Media One. Any help you can offer on this will be greatly appreciated.

Sincerely,

Jim Pickrell



August 10, 2000

AT&T Broadband P.O. Box 5630 Denver. CO 80217-5630

VIA FEDERAL EXPRESS

Jim Pickrell
President
Brand X Internet LLC
927 6th Street
Santa Monica, CA 90403

Dear Mr. Pickrell:

Your letter requesting interconnection at certain of the cable headends of AT&T's affiliate MediaOne has been forwarded to me for response. As you may know, AT&T has publicly stated that it is committed to providing its cable customers with a choice of ISPs when practicable. To this end, AT&T Broadband recently announced technical and operational trials in Colorado and Massachusetts that will test how multiple Internet service providers can offer high-speed, always-on cable Internet service over a hybrid fiber-coaxial network. In the meantime, MediaOne Road Runner customers will continue to enjoy the ability to access all publicly available sites and content that are interconnected through the Internet.

I note that two federal courts have recently rejected claims that cable companies are subject to government-mandated access obligations. As you may know, the FCC will shortly commence a proceeding to evaluate further the issue of government-mandated access. This proceeding would address the legal issues raised by the recent court decisions and assess developments in the marketplace. In announcing this proceeding, the FCC chairman reiterated his clear preference for market forces over government intervention. AT&T strongly agrees. The company should be in a position to discuss appropriate commercial arrangements once it completes its technical and operational trials.

Sincerely

Douglas G. Garrett

Counsel for AT&T Broadband, L.L.C.

cc:

Ruth MacNaughton Teresa Ono Glenn Stover Perry Parks



August 15, 2000

Mr. Jim Pickrell
President
Brand X Internet LLC
927 6th Street
Santa Monica, CA 90403

Dear Jim:

Re: Broadband Internet Access Service

Thank you for your interest in Time Warner Cable's initiative to offer multiple Internet service providers on its broadband cable systems. As we have stated, we are very committed to providing our customers a choice of ISP's. We are actively seeking to find companies interested in offering Internet services on our broadband cable systems and we appreciate your taking the time to contact us in this regard.

Prior to initiating formal discussions, it would be helpful to receive some additional background information about your company and the specific areas of Time Warner Cable that you are interested in serving. Please provide us with the following information at your convenience:

- General information about your company:
 - 1. What products does the company offer?
 - 2. Does the company currently offer any broadband services?
 - 3. How many customers does the company currently serve?
 - 4. How long has the company been in business?
 - 5. What is the ownership structure of the company?
 - 6. What is the company's current service area?
 - 7. What is the financial composition of the company?
- List the Time Warner Cable areas that the company wishes to serve. Facilities to the Time Warner Cable headend in these areas will need to be provided by your company.

As soon as we receive the above information, we will provide you with a list of the Time Warner Cable systems in your service areas. Thank you again for your interest in our broadband network and we look forward to hearing from you soon.

Sincerely,

Bonnie Blecha



DECLARATION

I, Frederick Enns, do hereby declare as follows:

- 1. I am the Chief Technical Officer and a Vice President of Hybrid Networks, Inc. where I am responsible for developing Hybrid's technologies. I am a BS Physics graduate of the University of California at San Diego, a MS Physics graduate of the University of Washington, and a MS Electrical Engineering graduate of Stanford University. I have worked in the area of data and telecommunications since 1980.
- 2. I am familiar with the June 1, 1999 Petition for Declaratory Ruling of Internet Ventures, Inc. and Internet On-Ramp, Inc. and the comments regarding the Petition filed with the FCC on July 13, 1999 by the National Cable Television Association, AT&T Corp., Time Warner Cable, MediaOne Group, Inc., Adelphia Communications Corporation, Insight Communications, L.P., Mediacom LLC, GTE Service Corporation and the American Cable Association (collectively, the "Cable Commenters").
- 3. In their comments, the Cable Commenters maintain that cable leased access to ISPs will not work from a technical standpoint and that such access will have dire consequences for the cable industry. For the following reasons, these contentions have no merit.
- 4. To start with, the Cable Commenters are wrong in suggesting that ISP leased access will consume all of their channels that have been set aside for leased access for traditional video programmers. In fact, an unlimited number of ISPs can be accommodated on a single 6 MHz cable channel.
- 5. The technical requirements of leased access are not new to the networking industry. As a result there are two widely available solutions that enable any operator of a network to implement leased access.

- 6. Before describing the technical solutions a brief description of the issues of leased access is needed. Until the advent of high speed access services like Digital Subscriber Line (DSL) for phone lines and Data Over Cable System Interface Specification (DOCSIS)-like protocols for the cable plant, the role of the traditional Internet Service Provider (ISP) was to provide both the access service through dial-up phone modem banks and the high speed aggregate connection to the Internet. Typically the ISP leases bandwidth from an Internet backbone provider such as UUNET. Many ISPs expand their business with a spectrum of additional services such as EMAIL, and WEB site hosting. They also differentiate their services by supporting optional Internet technologies such as multicasting, streaming video, and voice over IP (VoIP) applications. Until now the industry has had two layers, the backbone Internet bandwidth providers who sold bulk access and the ISPs who provided access, connection, and services to individual subscribers. Now there are networks that are being built for subscriber access (like cable) that mirror the networks that exist for the backbone.
- 7. The technical issue behind leased access is how can a subscriber access network on a cable plant connect to multiple ISPs? Leased access requires that the data for subscriber A1 with service from ISP A go through ISP A to the Internet while data from subscriber B1 with service from ISP B go through ISP B. To provide leased access, the data from each ISP's customer pool must be separated and sent through the correct service provider.
- 8. The Cable Commenters in their statements opposing leased access assume that the only technical solution is to provide a separate cable channel for each ISP. As they point out, this would consume a large number of channels on a cable system if a lot of ISPs required access. However a separate channel for each ISP is not needed. Two solutions that work with a shared channel are explained below.

9. The first solution available to the cable operators is source routing. Normally the Internet Protocol (IP) data is sent through a network by an address header that is attached to each packet. Under IP each computer connected to the Internet is assigned a unique address in the form of a large number. This number is the IP Internet address of the computer. ISP operators as part of their service assign these address numbers. Like a regular postal letter, the IP address information in a packet contains both the destination address of where it is going and the source address of where it came from. Routers are devices that look at the addresses of IP packets and decide where they should go. The routers are standard devices supplied by many companies like Cisco and 3COM and they all operate in a similar fashion. Normally, the router looks at the destination address in the packet to decide where it should be sent. However for a shared channel supporting leased access to multiple ISPs, the router at the cable operator's headend needs to look at the source address. This is called source routing. Each subscriber is configured with an IP address associated with a particular ISP. When the router sees a packet from a subscriber with a source address associated with ISP A then it is sent to ISP A. The same would be true with ISP B and its subscribers. There is no limit to the number of ISPs that are handled in this fashion. To use the letter analogy, the source address would be written in a fashion like:

> John Doe In care of Internet Ventures 123 Willow St. Eugene OR. 12345

Where the home address of John Doe is 123 Willow St., but the "In care of" line tells the mailman how to forward it.

10. Source routing is a feature that has been used in routers for a number of years; it is not new and it is widely implemented in Internet access routers. Contrary to other representations being made, source routing requires no new technical developments and it is compatible with the

existing IP network equipment of the cable operator. Hybrid Networks has two broadband network operators who are using source routing to provide leased access over a shared channel to multiple ISPs.

- Tunneling is an alternative IP networking technique that can be used to provide leased access over a shared cable plant channel. Like source routing, it is a technology that has been around for a number of years. Tunneling is used by many businesses that use the Internet for intra-business communications. It gives the business the appearance that it has a virtual private network (VPN) between its offices even though it is really using the shared network connection of the Internet. This is the same functionality that is needed by ISPs sharing a cable plant's IP network.
- 12. Tunneling uses the technique of placing an IP packet addressed to some computer in the Internet inside a packet addressed to the ISP operator of the subscriber. The cable operator's router then sends the IP packet to the ISP using its normal destination routing algorithm. This sharing technology can be extended to serve as many ISPs as needed. Each ISP receives packets only from its subscribers. It then takes these packets, removes the outside envelope and sends the inside packet to the destination address.
- 13. The tunneling technique does require additional software in the cable modem to add the tunneling envelope upstream. Most cable modems on the market today, including DOCSIS modems, have the capability to receive new software programs over the cable network. These modems can be upgraded with a tunneling software feature without the subscribers having to do anything. Again, this is not a new technique and it is well known in the industry.
- 14. Finally, it is important to point out that the data signals used to form the Internet access video programming stream are more robust than the traditional streams that carry video

pictures. Hybrid and other system vendors have extensive experience in placing the Internet access channel above the last TV picture channel on cable systems in what are called the roll-off channels. This means the Internet service does not have to displace other services on the cable plant.

- 15. The service provided by an Internet access channel is a very efficient use of the cable plant's resources. Capacity studies by Hybrid Networks show that a single channel downstream and upstream can support about 7,500 Internet service subscribers with high speed access. Since the cable plant architecture feeds signals to many individual nodes within the plant, many separate groups of 7,500 subscribers can be serviced by reserving one channel leased to multiple ISPs. In a typical metropolitan area, the capacity of a cable plant with one channel reserved for Internet access can serve over a hundred thousand subscribers.
- 16. The Cable Commenters are also incorrect in representing that ISP leased access will force cable operators to engage in costly modifications of their systems. In fact, I am familiar with the technical facilities used by Internet Ventures and other independent ISPs. Those facilities are fully compatible with analog or digital cable systems. Accordingly, no modification of facilities by the cable operator will be necessary.
- 17. Hybrid Networks estimates that 90% of the cable modem installations controlled by the cable operators have been on two-way cable plants. Yet only less than 20% of the cable plant has been built out for two-way operation. The cable industry has ignored Internet access for the 80% of the subscribers serviced by these one-way plants. This is a serious policy issue since one-way systems are typically found in rural and in poorer communities. Leased access will open these plants to competition and provide the subscribers there with a reliable, high performance Internet access service.

18. In its comments Time Warner states that one-way telephone return systems like those deployed by IVI are "inherently inferior (due to the use of telephone return paths)". This is an inaccurate statement that reflects Time Warner's apparent disposition not to provide service to one-way subscribers. Hybrid and several other cable modem vendors supply systems that work over one-way cable plants. These systems provide high speed access that is comparable in performance to systems on two-way plants and in any event, far superior to other access technologies that would otherwise be available to these users. About half of our modems that are installed are on one-way systems.

19. Hybrid Networks supports IVI's request for a leased access ruling. The technology needed to implement leased access is readably available, reliable, and inexpensive to implement. We also feel that a leased access ruling will speed up the deployment of Internet services on cable plants and result in more subscribers, and particularly poorer and rural subscribers, being offered service sooner.

Under penalty of perjury, the foregoing is true and correct.

8/9/99

Date

Frederick Frons

STATE OF VERMONT PUBLIC SERVICE BOARD

DOCKET NUMBER 6101
ADELPHIA COMMUNICATIONS CORPORATION REGARDING
MOUNTAIN CABLE COMPANY'S REQUESTS FOR RENEWAL
OF ITS VARIOUS FRANCHISE AGREEMENTS, PURSUANT TO
SECTION 626 OF THE 1984 CABLE ACT (47 U.S.C.)
SECTION 546.

and

DOCKET NUMBER 6223

MOTION OF VERMONT DEPARTMENT OF PUBLIC SERVICE FOR A SHOW CAUSE HEARING RE: NONCOMPLIANCE BY MOUNTAIN CABLE COMPANY D/B/A ADELPHIA CABLE COMMUNICATIONS OF STIPULATION AND BOARD ORDER.

November 4, 1999 8:30 a.m.

112 State Street Montpelier, Vermont

Technical Hearing held before Board Members of the Vermont Public Service Board, at the Third Floor Conference Room, Chittenden Bank Building, 112 State Street, Montpelier, Vermont, on November 4, 1999, beginning at 8:30 a.m.

BOARD MEMBERS: Michael H. Dworkin, Chairman

Suzanne D. Rude David C. Coen

STAFF MEMBERS: John P. Bentley, Esquire

George Young, Esquire

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specifically use an example, which is a made up example but it's realistic, of the Department of Employment and Training wanting to use the leased access in order to run a training around the state.

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What I described in my testimony is something that Cisco offers -- Cisco is the one who makes these routers and the CMTS. Although they are not the only one who makes it, they are the leader in the market share. They make something called IPTV. It is Internet Protocol TV. Basically it would allow people sitting at computers with cable modems around the state to view video television programming that has a data element to it so they could interact with an instructor and they could answer questions and receive text.

This type of an application could be run off of a Department of Employment and Training server coming into a router, either ISP router or into the CMTS.

The way that the -- the way it's described in this article, Third Party Access to Cable Modems in Canada is with a Tekton address, so to speak, the source of the packets and they move them along. So, in this

2 3 scenario, the cable company can tag the 4 packets. They can tag the packets with the

5 Power Link identifier in the address and move 6 the packets from cable modem subscribers that 7 are Power Link subscribers with the would be

8 transferred up here to the Internet that way 9 and vice versa. But the rest of the packets 10 would be transferred appropriately to either

11 the point of interface router or the 12 individual router off the CMTS and out to the

Internet that way. Separate applications that don't involve

the Internet can plug in in a similar fashion. BY MR. ELLIS:

17 Mr. Shapiro, under your example, which is 18 based upon Canadian trials, the ISPs are only using the 19 CMTS and the link to the cable modem. That's the only 20 part of the cable system that the ISPs are using; is that correct? 21

22 A. Well, their packets are passing through the 23 CMTS and the router. The CMTS, router and the coaxial

24 cable to the cable modem. The Company -- the cable

25 company would be entitled to -- the cable company would

diagram -- remember, the fellow asked me about Tekton yesterday. I'm not totally ignorant of Tekton diagrams. I did find this diagram in this article, which I also blew up, enlarged, and it is consistent.

The way they recommend to do it in Canada is instead of individual routers here for each ISP, they put in what's called a point of interface router. It is a router that they would all share.

Now in the GFTE trial, they tried it using the point of interface router and that router cost \$60,000 they told me. However, it's not actually -- now, they -- it is not actually necessary for the cable company to buy a router. They can allow the ISPs to put in their own routers, therefore, eliminating the expense, that \$60,000 expense for the point of interface router.

THE CHAIRMAN: Let me just be clear. It doesn't eliminate the expense, it transfers it to somebody else?

MR. SHAPIRO: Right. Exactly. And that's how it works. The routers work by using source routing. They look at the return Page 21

Page 20

1 still be able to use policy-based routing in this section.

And because of that, we feel it is something that needs to 2

3 be addressed to prevent any anti-competitive -- any

4 potential for anti-competitive degrading of the

5 competitive ISP signals in this piece.

Q. I guess my question was more the routers that come off of the CMTS one hop away, as you have described it, those are owned by the ISPs?

9 These routers -- there's two options. Either 10 the cable company can put in a point of interface router 11 and that would be shared by all entrants -- and that's 12 stackable, so if you run out of ports, you just add 13 another one, or each ISP can put in their own router. A 14 third option would be there could be a point of interface router shared by the ISPs at the ISPs' expense. The 15 initial ISP, for example, could put in a router and then 16 allow people to plug into that. But, yes, the only port 17 18 that has to be owned by the cable company is this port

20 Q. Would it be possible for -- let me start over 21 again.

22 Under your diagram, if ISP three comes in and 23 puts in their own router and attaches it to the CMTS, does 24 that increase the capacity or the available capacity to

25 the Internet backbone?

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